

6. The isolated polynucleotide of claim 5, wherein the SNP-containing nucleotide sequence is at least 97% identical to SEQ ID NO. 1.
7. The isolated polynucleotide of claim 6, wherein the complementary nucleotide sequence is 100% identical to the strict complement of the SNP-containing nucleotide sequence.
8. The isolated polynucleotide of claim 7, wherein the SNP-containing nucleotide sequence is at least 99% identical to SEQ ID NO. 1.
9. The isolated polynucleotide of claim 8, wherein the SNP-containing nucleotide sequence is 100% identical to SEQ ID NO. 1, except at the position of said SNP or the same SNP at an equivalent position.
10. The isolated polynucleotide of claim 1, 2 or 3, wherein the SNP-containing nucleotide sequence is at least 90% identical to the coding region of SEQ ID NO. 1.
11. The isolated polynucleotide of claim 10, wherein the SNP-containing nucleotide sequence is at least 95% identical to the coding region of SEQ ID NO. 1.
12. The isolated polynucleotide of claim 11, wherein the SNP-containing nucleotide sequence is at least 97% identical to the coding region of SEQ ID NO. 1.
13. The isolated polynucleotide of claim 12, wherein the SNP-containing nucleotide sequence is at least 99% identical to the coding region of SEQ ID NO. 1 and the complementary nucleotide sequence is 100% identical to the strict complement of the SNP-containing nucleotide sequence.
14. The isolated polynucleotide of claim 13, wherein the SNP-containing nucleotide sequence is 100% identical to the coding region of SEQ ID NO. 1, except at the position of said SNP or the same SNP at an equivalent position.
15. An isolated polynucleotide comprising:
 - a) a SNP-containing nucleotide sequence that is at least 90% identical to

SEQ ID NO. 1 or the coding region thereof, provided that the SNP-containing nucleotide sequence comprises the t1049a SNP or the same SNP at an equivalent position; or

- b) a complementary nucleotide sequence that is at least 95% identical to the strict complement of the SNP-containing nucleotide sequence.
16. The isolated polynucleotide of claim 15, wherein the SNP-containing nucleotide sequence is at least 95% identical to SEQ ID NO. 1.
17. The isolated polynucleotide of claim 16, wherein the SNP-containing nucleotide sequence is at least 97% identical to SEQ ID NO. 1 and the complementary nucleotide sequence is at least 97% identical to the strict complement of the SNP-containing nucleotide sequence.
18. The isolated polynucleotide of claim 17, wherein the SNP-containing nucleotide sequence is at least 99% identical to SEQ ID NO. 1 and the complementary nucleotide sequence is 100% identical to the strict complement of the SNP-containing nucleotide sequence.
19. The isolated polynucleotide of claim 18, wherein the SNP-containing nucleotide sequence is 100% identical to SEQ ID NO. 1, except at the position of the t1049a SNP or the same SNP at an equivalent position.
20. The isolated polynucleotide of claim 15, wherein the SNP-containing nucleotide sequence is at least 95% identical to the coding region of SEQ ID NO. 1.
21. The isolated polynucleotide of claim 20, wherein the SNP-containing nucleotide sequence is at least 97% identical to the coding region of SEQ ID NO. 1 and the complementary nucleotide sequence is at least 97% identical to the strict complement of the SNP-containing nucleotide sequence.
22. The isolated polynucleotide of claim 21, wherein the SNP-containing nucleotide sequence is at least 99% identical to the coding region of SEQ ID NO. 1 and the complementary nucleotide sequence is 100% identical to the strict complement

of the SNP-containing nucleotide sequence.

23. The isolated polynucleotide of claim 22, wherein the SNP-containing nucleotide sequence is 100% identical to the coding region of SEQ ID NO. 1, except at the position of the t1049a SNP or the same SNP at an equivalent position.
24. An isolated polynucleotide comprising:
 - a) a SNP-containing nucleotide sequence that is at least 95% identical to SEQ ID NO. 1, provided that the SNP-containing nucleotide sequence comprises the t1265c SNP or the same SNP at an equivalent position; or
 - b) a complementary nucleotide sequence that is at least 97% identical to the strict complement of the SNP-containing nucleotide sequence.
25. The isolated polynucleotide of claim 24, wherein the SNP-containing nucleotide sequence is at least 97% identical to SEQ ID NO. 1.
26. The isolated polynucleotide of claim 25, wherein the SNP-containing nucleotide sequence is at least 99% identical to SEQ ID NO. 1 and the complementary nucleotide sequence is 100% identical to the strict complement of the SNP-containing nucleotide sequence.
27. The isolated polynucleotide of claim 26, wherein the SNP-containing nucleotide sequence is 100% identical to SEQ ID NO. 1, except at the position of the t1265c SNP or the same SNP at an equivalent position.
28. An isolated polynucleotide comprising:
 - a) a SNP-containing nucleotide sequence that is at least 97% identical to SEQ ID NO. 1 or the coding region thereof, provided that the SNP-containing nucleotide sequence comprises the c794g SNP or the same SNP at an equivalent position; or
 - b) a complementary nucleotide sequence that is at least 97% identical to the strict complement of the SNP-containing nucleotide sequence.
29. The isolated polynucleotide of claim 28, wherein the SNP-containing nucleotide

- sequence is at least 99% identical to SEQ ID NO. 1.
30. The isolated polynucleotide of claim 29, wherein the complementary nucleotide sequence is 100% identical to the strict complement of the SNP-containing nucleotide sequence.
 31. The isolated polynucleotide of claim 30, wherein the SNP-containing nucleotide sequence is 100% identical to SEQ ID NO. 1, except at the position of the c794g SNP or the same SNP at an equivalent position.
 32. The isolated polynucleotide of claim 28, wherein the SNP-containing nucleotide sequence is at least 99% identical to the coding region of SEQ ID NO. 1.
 33. The isolated polynucleotide of claim 32, wherein the complementary nucleotide sequence is 100% identical to the strict complement of the SNP-containing nucleotide sequence.
 34. The isolated polynucleotide of claim 33, wherein the SNP-containing nucleotide sequence is 100% identical to the coding region of SEQ ID NO. 1, except at the position of the c794g SNP or the same SNP at an equivalent position.
 35. An isolated polynucleotide comprising:
 - a) a SNP-containing nucleotide sequence that is at least 97% identical to SEQ ID NO. 1 or the coding region thereof, provided that the SNP-containing nucleotide sequence comprises the t1155a SNP or the same SNP at an equivalent position; or
 - b) a complementary nucleotide sequence that is more than 97% identical to the strict complement of the SNP-containing nucleotide sequence.
 36. The isolated polynucleotide of claim 35, wherein the SNP-containing nucleotide sequence is at least 99% identical to SEQ ID NO. 1 and the complementary nucleotide sequence is 100% identical to the strict complement of the SNP-containing nucleotide sequence.
 37. The isolated polynucleotide of claim 36, wherein the SNP-containing nucleotide

sequence is 100% identical to SEQ ID NO. 1, except at the position of the t1155a SNP or the same SNP at an equivalent position.

38. The isolated polynucleotide of claim 35, wherein the SNP-containing nucleotide sequence is at least 99% identical to the coding region of SEQ ID NO. 1 and the complementary nucleotide sequence is 100% identical to the strict complement of the SNP-containing nucleotide sequence.
39. The isolated polynucleotide of claim 38, wherein the SNP-containing nucleotide sequence is 100% identical to the coding region of SEQ ID NO. 1, except at the position of the t1155a SNP or the same SNP at an equivalent position.
40. The isolated polynucleotide of claim 1, 2, 3, 15, 24, 28 or 35, wherein the SNP-containing nucleotide sequence encodes a variant of an interferon protein.
41. The isolated polynucleotide of claim 40, wherein the SNP-containing nucleotide sequence encodes a variant of an interferon alpha protein.
42. The isolated polynucleotide of claim 41, wherein the SNP-containing nucleotide sequence encodes a variant of an interferon alpha-21 protein.
43. The isolated polynucleotide of claim 42, wherein the SNP-containing nucleotide sequence encodes a variant of human interferon alpha-21 protein.
44. The isolated polynucleotide of claim 1, 2, 3, 15, 24, 28 or 35, wherein the SNP-containing nucleotide sequence encodes human interferon alpha-21 protein.
45. An isolated polynucleotide comprising:
 - a) a SNP-containing nucleotide sequence that is more than 90% identical to SEQ ID NO. 1 or the coding region thereof, provided that the SNP-containing nucleotide sequence comprises more than one SNP selected from the group consisting of c973a, g1011c, t1049a, t1155a, a1204g, t1265c, or equivalents thereof, and any combination of more than one of the foregoing SNPs; or
 - b) a complementary nucleotide sequence that is more than 97% identical to

the strict complement of the SNP-containing nucleotide sequence.

46. The isolated polynucleotide of claim 45, wherein the SNP-containing nucleotide sequence comprises more than two SNPs selected from the group consisting of c973a, g1011c, t1049a, t1155a, a1204g, t1265c, or equivalents thereof.
47. The isolated polynucleotide of claim 46, wherein the SNP-containing nucleotide sequence comprises more than three SNPs selected from the group consisting of c973a, g1011c, t1049a, t1155a, a1204g, t1265c, or equivalents thereof.
48. An isolated polynucleotide comprising:
 - a) a first nucleotide sequence that encodes a protein that exhibits interferon-type activity and that is at least 80% identical to all or part of SEQ ID NO. 1 or the coding region thereof, provided that the first nucleotide sequence has an adenine at nucleotide position 973 or the equivalent position; or
 - b) a complementary nucleotide sequence that is at least 97% identical to the strict complement of the first nucleotide sequence.
49. An isolated polynucleotide comprising:
 - a) a first nucleotide sequence that encodes a protein that exhibits interferon-type activity and that is at least 80% identical to all or part of SEQ ID NO. 1 or the coding region thereof, provided that the first nucleotide sequence has a cytosine at nucleotide position 1011 or the equivalent position; or
 - b) a complementary nucleotide sequence that is at least 97% identical to the strict complement of the first nucleotide sequence.
50. An isolated polynucleotide comprising:
 - a) a first nucleotide sequence that encodes a protein that exhibits interferon-type activity and that is more than 80% identical to all or part of SEQ ID NO. 1 or the coding region thereof, provided that the first nucleotide sequence has a guanine at nucleotide position 1204 or the equivalent

- position; or
- b) a complementary nucleotide sequence that is more than 97% identical to the strict complement of the first nucleotide sequence.
51. The isolated polynucleotide of claim 48, 49 or 50, wherein the first nucleotide sequence is at least 90% identical to all or part of SEQ ID NO. 1 or the coding region thereof and encodes a protein that exhibits interferon alpha type activity.
52. The isolated polynucleotide of claim 51, wherein the first nucleotide sequence is at least 95% identical to all or part of SEQ ID NO. 1 or the coding portion thereof and encodes a protein that exhibits interferon alpha-21 type activity.
53. The isolated polynucleotide of claim 52, wherein the first nucleotide sequence is at least 97% identical to all or part of SEQ ID NO. 1 or the coding region thereof and encodes a protein that exhibits human interferon alpha-21 activity.
54. An isolated polynucleotide comprising:
- a) a first nucleotide sequence that encodes a protein that exhibits interferon-type activity and that is at least 90% identical to all or part of SEQ ID NO. 1 or the coding region thereof, provided that the first nucleotide sequence has an adenine at nucleotide position 1049 or the equivalent position; or
 - b) a complementary nucleotide sequence that is at least 95% identical to the strict complement of the first nucleotide sequence.
55. The isolated polynucleotide of claim 54, wherein the first nucleotide sequence is at least 95% identical to all or part of SEQ ID NO. 1 or the coding region thereof and encodes a protein that exhibits interferon alpha type activity.
56. The isolated polynucleotide of claim 55, wherein the first nucleotide sequence is at least 97% identical to all or part of SEQ ID NO. 1 or the coding region thereof and encodes interferon alpha-21 type activity.
57. An isolated polynucleotide comprising:

- a) a first nucleotide sequence that encodes a protein that exhibits interferon alpha type activity and that is at least 95% identical to all or part of SEQ ID NO. 1, provided that the first nucleotide sequence has a cytosine at nucleotide position 1265 or the equivalent position; or
 - b) a complementary nucleotide sequence that is at least 97% identical to the strict complement of the first nucleotide sequence.
58. The isolated polynucleotide of claim 57, wherein the first nucleotide sequence is at least 97% identical to all or part of SEQ ID NO. 1 and encodes a protein that exhibits interferon alpha-21 type activity.
59. An isolated polynucleotide comprising:
- a) a first nucleotide sequence that encodes a protein that exhibits interferon alpha type activity and that is at least 97% identical to all or part of SEQ ID NO. 1 or the coding region thereof, provided that the first nucleotide sequence has a guanine at nucleotide position 794 or the equivalent position; or
 - b) a complementary nucleotide sequence that is at least 97% identical to the strict complement of the first nucleotide sequence.
60. The isolated polynucleotide of claim 59, wherein the first nucleotide sequence is at least 99% identical to all or part of SEQ ID NO. 1 or the coding region thereof and encodes a protein that exhibits interferon alpha-21 type activity.
61. An isolated polynucleotide comprising:
- a) a first nucleotide sequence that encodes a protein that exhibits interferon alpha type activity and that is at least 97% identical to all or part of SEQ ID NO. 1 or the coding region thereof, provided that the first nucleotide sequence has an adenine at nucleotide position 1155 or the equivalent position; or
 - b) a complementary nucleotide sequence that is more than 97% identical to the strict complement of the first nucleotide sequence.

62. The isolated polynucleotide of claim 61, wherein the first nucleotide sequence is at least 99% identical to all or part of SEQ ID NO. 1 or the coding region thereof and encodes a protein that exhibits interferon alpha-21 type activity.
63. An isolated polynucleotide that codes for:
 - a) a polypeptide comprising SEQ ID NO. 2, provided that the polypeptide comprises the A42G SNP; or
 - b) a portion of the polypeptide comprising the A42G SNP or the same SNP at an equivalent position, provided that the portion of the polypeptide exhibits the same or substantially the same biological activity as the mature or the immature form of the polypeptide.
64. The isolated polynucleotide of claim 63, wherein the portion of the polypeptide exhibits the same biological activity as the mature or immature form of polypeptide.
65. An isolated polynucleotide that codes for:
 - a) a polypeptide comprising SEQ ID NO. 2, provided that the polypeptide comprises the Q102K SNP; or
 - b) a portion of the polypeptide comprising the Q102K SNP or the same SNP at an equivalent position, provided that the portion of the polypeptide exhibits the same or substantially the same biological activity as the mature or the immature form of the polypeptide.
66. The isolated polynucleotide of claim 65, wherein the portion of the polypeptide exhibits the same biological activity as the mature or the immature form of the polypeptide.
67. An isolated polynucleotide that codes for:
 - a) a polypeptide comprising SEQ ID NO. 2, provided that the polypeptide comprises the Q114H SNP; or
 - b) a portion of the polypeptide comprising the Q114H SNP or the same SNP at an equivalent position, provided that the portion of the

polypeptide exhibits the same or substantially the same biological activity as the mature or the immature form of the polypeptide.

68. The isolated polynucleotide of claim 67, wherein the portion of the polypeptide exhibits the same biological activity as the mature or the immature form of the polypeptide.
69. An isolated polynucleotide that codes for:
 - a) a polypeptide comprising SEQ ID NO. 2, provided that the polypeptide comprises the V127D SNP; or
 - b) a portion of the polypeptide comprising the V127D SNP or the same SNP at an equivalent position, provided that the portion of the polypeptide exhibits the same or substantially the same biological activity as the mature or the immature form of the polypeptide.
70. The isolated polynucleotide of claim 69, wherein the portion of the polypeptide exhibits the same biological activity as the mature or the immature form of the polypeptide.
71. The isolated polynucleotide of claim 69 or 70, wherein the polypeptide or the portion of the polypeptide further comprises the Q114H SNP.
72. An isolated polynucleotide that codes for:
 - a) a polypeptide comprising amino acids 1 through 161 of SEQ ID NO. 2; or
 - b) a portion of the polypeptide, provided that the portion of the polypeptide exhibits the same or substantially the same biological activity as the mature or the immature form of the polypeptide.
73. The isolated polynucleotide of claim 72, wherein the portion of the polypeptide exhibits the same biological activity as the mature or the immature form of the polypeptide.
74. An isolated polynucleotide that codes for:

- a) a polypeptide comprising SEQ ID NO. 2, provided that the polypeptide comprises the K179E SNP; or
 - b) a portion of the polypeptide comprising the K179E SNP or the same SNP at an equivalent position, provided that the portion of the polypeptide exhibits the same or substantially the same biological activity as the mature or the immature form of the polypeptide.
75. The isolated polynucleotide of claim 74, wherein the portion of the polypeptide exhibits the same biological activity as the mature or the immature form of the polypeptide.
76. An isolated polynucleotide that codes for:
- a) a polypeptide comprising SEQ ID NO. 2, provided that the polypeptide comprises the K179E SNP; or
 - b) a portion of the polypeptide comprising the K179E SNP or the same SNP at an equivalent position, provided that the portion of the polypeptide exhibits the same or substantially the same biological activity as the mature or the immature form of the polypeptide.
77. The isolated polynucleotide of claim 76, wherein the portion of the polypeptide exhibits the same biological activity as the mature or the immature form of the polypeptide.
78. A host cell comprising a recombinant vector comprising the isolated polynucleotide of claim 1, 2, 3, 15, 24, 28, 35, 63, 65, 67, 69, 72, 74 or 76.
79. A therapeutic agent comprising the isolated polynucleotide of claim 1, 2, 3, 15, 24, 28, 35, 63, 65, 67, 69, 72, 74 or 76.
80. A method of detecting or genotyping all or part of a nucleic acid sequence that is at least 80% identical to SEQ ID NO. 1 or the coding region thereof, comprising hybridizing to said nucleic acid sequence all or part of the isolated polynucleotide of claim 1, 2, 3, 15, 24, 28, 35, 63, 65, 67, 69, 72, 74 or 76, provided that said nucleic acid sequence comprises at least one of c794g, c973a,

g1011c, t1049a, t1155a, a1204g, t1265c, or any combination of the foregoing SNPs.

81. A method for determining statistically relevant associations between a disease or resistance thereto and at least one SNP in the interferon alpha-21 gene selected from the group consisting of c794g, c973a, g1011c, t1049a, t1155a, a1204g, t1265c, and any combination of the foregoing, comprising:
 - a) genotyping a sample of individuals with respect to said at least one SNP;
 - b) determining the distribution of said disease or resistance within the sample;
 - c) comparing the genotype data with the distribution of said disease or resistance; and
 - d) analyzing the comparison for statistically relevant associations.
82. A method for diagnosing or determining a prognosis of a disease or a resistance to the disease in an individual, comprising determining whether the interferon alpha-21 gene of the individual comprises at least one SNP selected from the group consisting of c794g, c973a, g1011c, t1049a, t1155a, a1204g, t1265c, and any combination of the foregoing.
83. An isolated polypeptide comprising a peptide sequence that is at least 80% identical to:
 - a) the amino acid sequence of SEQ ID NO. 2, or
 - b) the amino acid sequence of amino acids 24 through 189 of SEQ ID NO. 2, provided that the peptide sequence comprises the Q102K SNP or the same SNP at an equivalent position.
84. An isolated polypeptide comprising a peptide sequence that is at least 80% identical to:
 - a) the amino acid sequence of SEQ ID NO. 2, or
 - b) the amino acid sequence of amino acids 24 through 189 of SEQ ID NO. 2, provided that the peptide sequence comprises the Q114H SNP or the same SNP at an equivalent position.

85. An isolated polypeptide comprising a peptide sequence that is more than 80% identical to:
 - a) the amino acid sequence of SEQ ID NO. 2, or
 - b) the amino acid sequence of amino acids 24 through 189 of SEQ ID NO. 2, provided that the peptide sequence comprises the K179E SNP or the same SNP at an equivalent position.
86. The isolated polypeptide of claim 83, 84, or 85, wherein the peptide sequence is at least 90% identical to the amino acid sequence of a) or b).
87. The isolated polypeptide of claim 86, wherein the peptide sequence is at least 95% identical to the amino acid sequence of a) or b).
88. The isolated polypeptide of claim 87, wherein the peptide sequence is at least 97% identical to the amino acid sequence of a) or b).
89. The isolated polypeptide of claim 88, wherein the peptide sequence is at least 99% identical to the amino acid sequence of a) or b).
90. An isolated polypeptide comprising a peptide sequence that is at least 90% identical to:
 - a) the amino acid sequence of SEQ ID NO. 2, or
 - b) the amino acid sequence of amino acids 24 through 189 of SEQ ID NO. 2, provided that the peptide sequence comprises V127D or the same SNP at an equivalent position.
91. The isolated polypeptide of claim 90, wherein the peptide sequence is at least 95% identical to the amino acid sequence of a) or b).
92. The isolated polypeptide of claim 91, wherein the peptide sequence is at least 97% identical to the amino acid sequence of a) or b).
93. The isolated polypeptide of claim 92 wherein the peptide sequence is at least 99% identical to the amino acid sequence of a) or b).

94. An isolated polypeptide comprising a peptide sequence that is at least 95% identical to:
 - a) the amino acid sequence of SEQ ID NO. 2, or
 - b) the amino acid sequence of amino acids 24 through 189 of SEQ ID NO. 2, provided that the peptide sequence comprises A42G or the same SNP at an equivalent position.
95. The isolated polypeptide of claim 94 wherein the peptide sequence is at least 97% identical to the amino acid sequence of a) or b).
96. The isolated polypeptide of claim 95, wherein the peptide sequence is at least 99% identical to the amino acid sequence of a) or b).
97. An isolated polypeptide comprising a peptide sequence that is at least 97% identical to:
 - a) amino acids 1 through 161 of SEQ ID NO. 2, or
 - b) amino acids 24 through 161 of SEQ ID NO. 2.
98. The isolated polypeptide of claim 97, wherein the peptide sequence is at least 97% identical to the amino acid sequence of a) or b).
99. The isolated polypeptide of claim 98, wherein the peptide sequence is at least 99% identical to the amino acid sequence of a) or b).
100. An isolated polypeptide comprising a peptide sequence that is at least 90% identical to:
 - a) the amino acid sequence of SEQ ID NO. 2, or
 - b) the amino acid sequence of amino acids 24 through 189 of SEQ ID NO. 2, provided that the peptide sequence comprises more than one SNP selected from the group consisting of A42G, Q102K, Q114H, V127D, C162stop, K179E, the same SNPs at equivalent positions, and combinations of the foregoing SNPs.
101. The isolated polypeptide of claim 100, wherein the peptide sequence comprises

at least the Q114H SNP and the V127D SNP.

102. The isolated polypeptide of claim 100, wherein the peptide sequence comprises more than two of said SNPs.
103. A therapeutic agent comprising the isolated polypeptide of claim 83, 84, 85, 90, 94, 97 or 100.
104. A method for treating or preventing a disease or disorder linked to interferon alpha-21, comprising administering to an individual a therapeutically effective amount of the therapeutic agent of claim 103 with a pharmaceutically acceptable excipient.
105. A method for preventing or treating a disease or disorder selected from the group consisting of cancers and tumors, infectious diseases, immunologically and auto-immunologically related diseases, cardiovascular diseases, metabolic diseases, central nervous system diseases, disorders caused by chemotherapy, anemia in dialyzed individuals, wounds, osteoporosis, and any combination of the foregoing, comprising administering to an individual suffering from or predisposed to said disease or disorder a therapeutically effective amount of the therapeutic agent of claim 101 with a pharmaceutically acceptable excipient.
106. The method of claim 105, wherein the disease or disorder is cancers and tumors and wherein said cancers and tumors comprise metastasizing renal carcinomas, melanomas, lymphomas comprising follicular lymphomas, and cutaneous T cell lymphoma, leukemias comprising hairy-cell leukemia, chronic lymphocytic leukemia and chronic myeloid leukemia, cancers of the liver, neck, head and kidneys, multiple myelomas, carcinoid tumors and tumors that appear following an immune deficiency comprising Kaposi's sarcoma in the case of AIDS.
107. An antibody immunospecific for the isolated polypeptide of claim 83, 84, 85, 90, 94, 97 or 100.
108. A therapeutic agent comprising the antibody of claim 107.

109. A method for treating or preventing a disease or disorder linked to interferon alpha-21, comprising administering to an individual a therapeutically effective amount of the therapeutic agent of claim 108 with a pharmaceutically acceptable excipient.
110. A method for preventing or treating a disease or disorder selected from the group consisting of cancers and tumors, infectious diseases, immunologically and auto-immunologically related diseases, cardiovascular diseases, metabolic diseases, central nervous system diseases, disorders caused by chemotherapy, anemia in dialyzed individuals, wounds, osteoporosis, and any combination of the foregoing, comprising administering to an individual suffering from or predisposed to said disease or disorder a therapeutically effective amount of the therapeutic agent of claim 108 with a pharmaceutically acceptable excipient.
111. The method of claim 110, wherein the disease or disorder is cancers and tumors and wherein said cancers and tumors comprise metastasizing renal carcinomas, melanomas, lymphomas comprising follicular lymphomas, and cutaneous T cell lymphoma, leukemias comprising hairy-cell leukemia, chronic lymphocytic leukemia and chronic myeloid leukemia, cancers of the liver, neck, head and kidneys, multiple myelomas, carcinoid tumors and tumors that appear following an immune deficiency comprising Kaposi's sarcoma in the case of AIDS.
112. A method for identifying a compound with an activity substantially similar to an activity of interferon alpha-21 comprising the Q114H SNP, the V127D SNP, or both SNPs, the method comprising:
 - a) determining whether or the extent to which said compound exhibits an activity selected from the group consisting of dendritic cell maturation, cytokine release by CD4+ or CD8+ T-lymphocytes, cytokine release by monocytes, in vitro or in vivo antiviral activity, cellular antiproliferative activity on Daudi Burkitt's cell lines, cellular antiproliferative activity on TF-1 cell lines, and any combination of the foregoing activities; and
 - b) comparing the activity determined in step a) with the activity of said interferon alpha-21.

113. A method for identifying a compound with an activity substantially similar to an activity of interferon alpha-21 comprising the K179E SNP, the method comprising:
 - a) determining whether or the extent to which said compound exhibits an activity selected from the group consisting of dendritic cell maturation, cytokine release by CD4+ or CD8+ T-lymphocytes, cytokine release by monocytes, in vitro or in vivo antiviral activity, cellular antiproliferative activity on Daudi Burkitt's cell lines, cellular antiproliferative activity on TF-1 cell lines, and any combination of the foregoing activities; and
 - b) comparing the activity determined in step a) with the activity of said interferon alpha-21.